

Commerce General Architecture

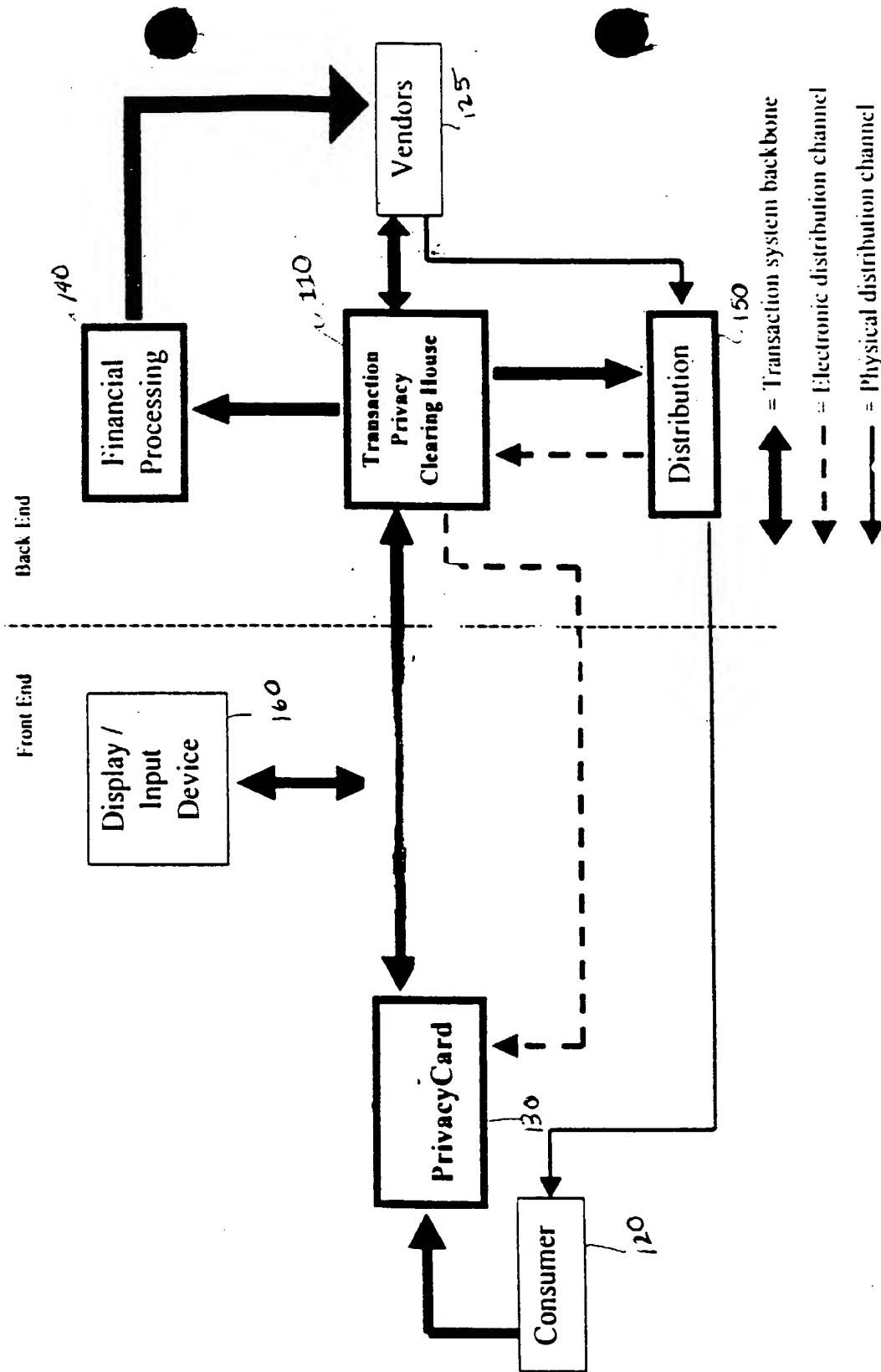


Fig 1

Commerce General Architecture - POS Terminal:

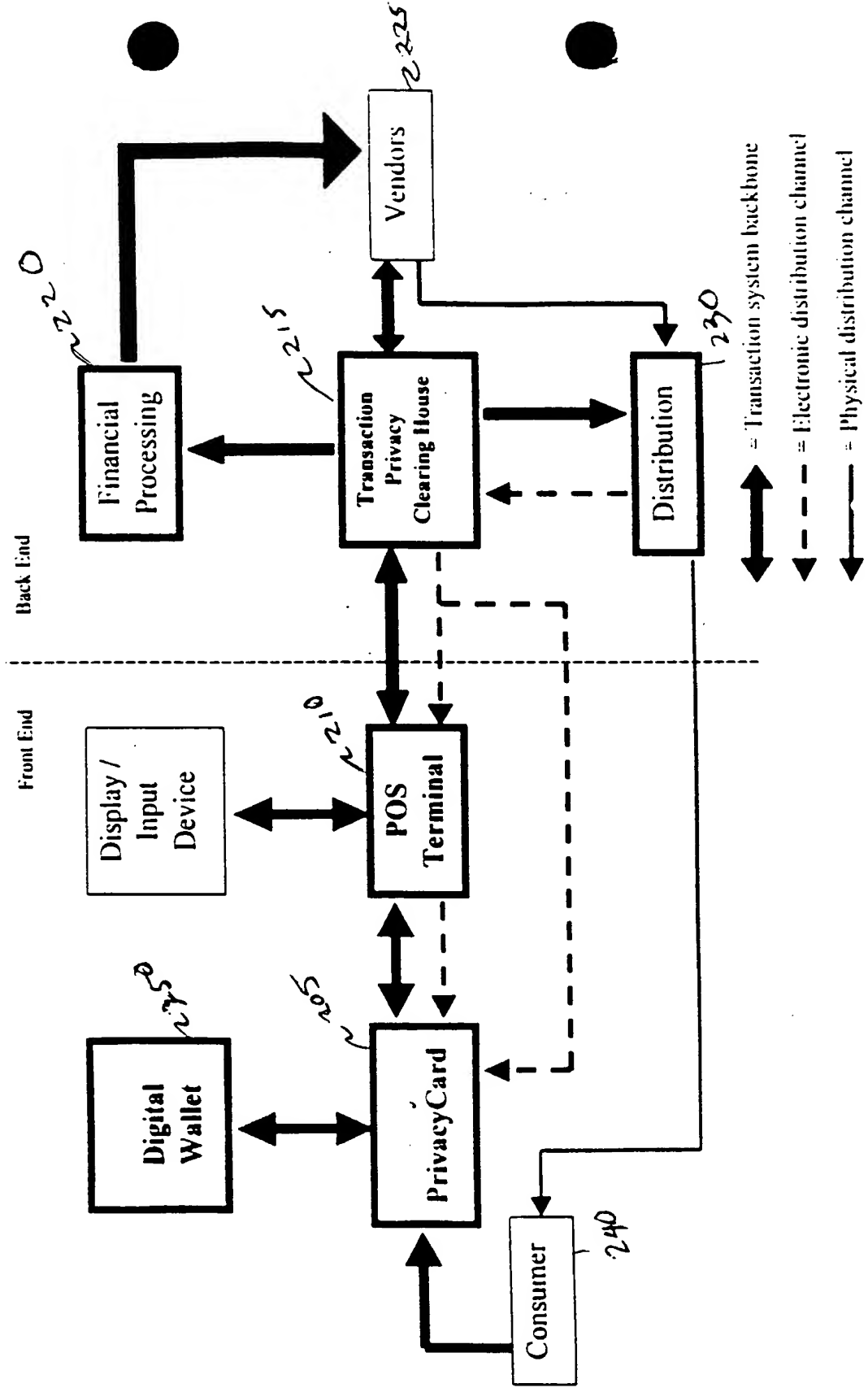


Fig 2

Commerce In-Home Environment

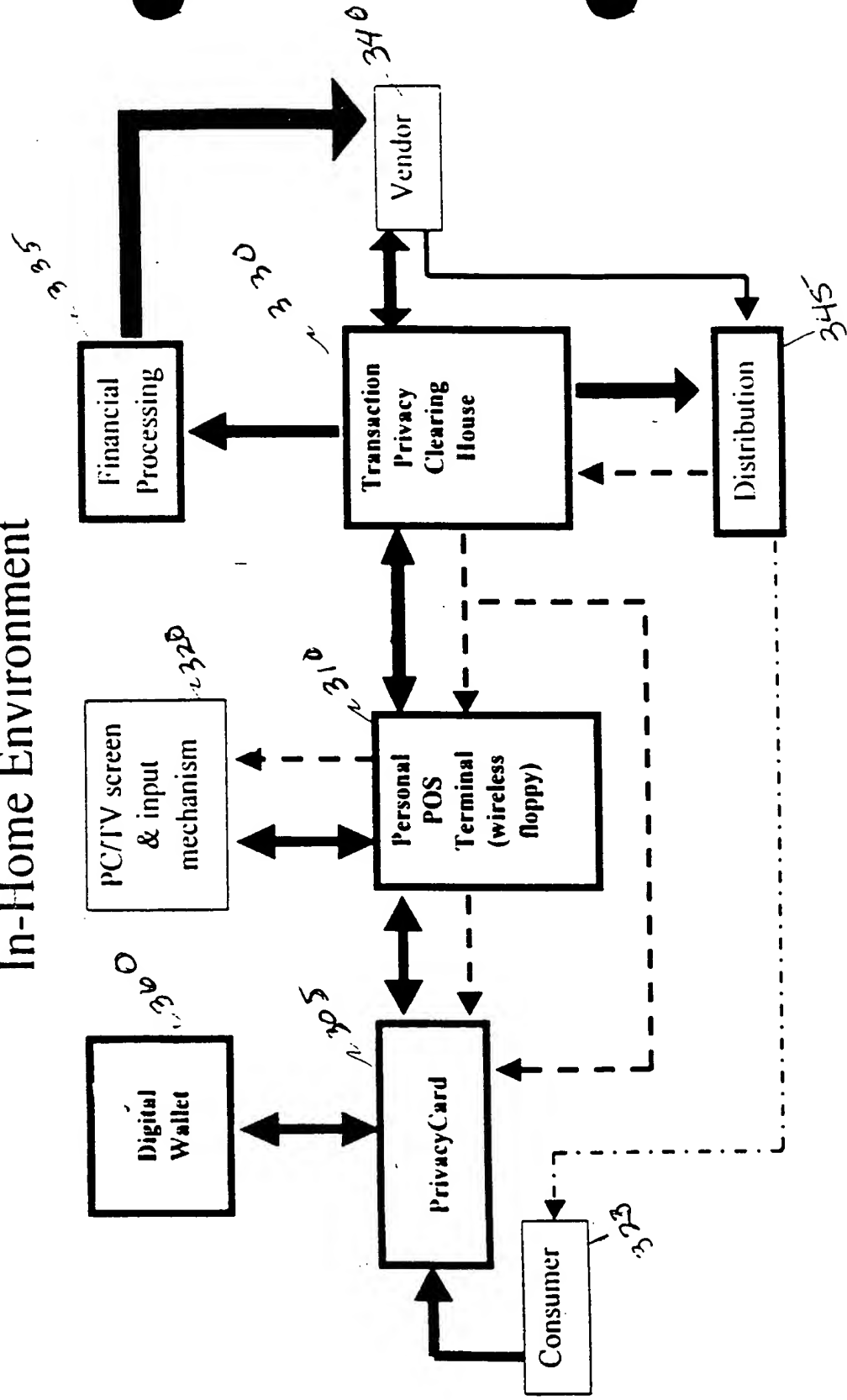


Fig 3

In-Store Retail Environment

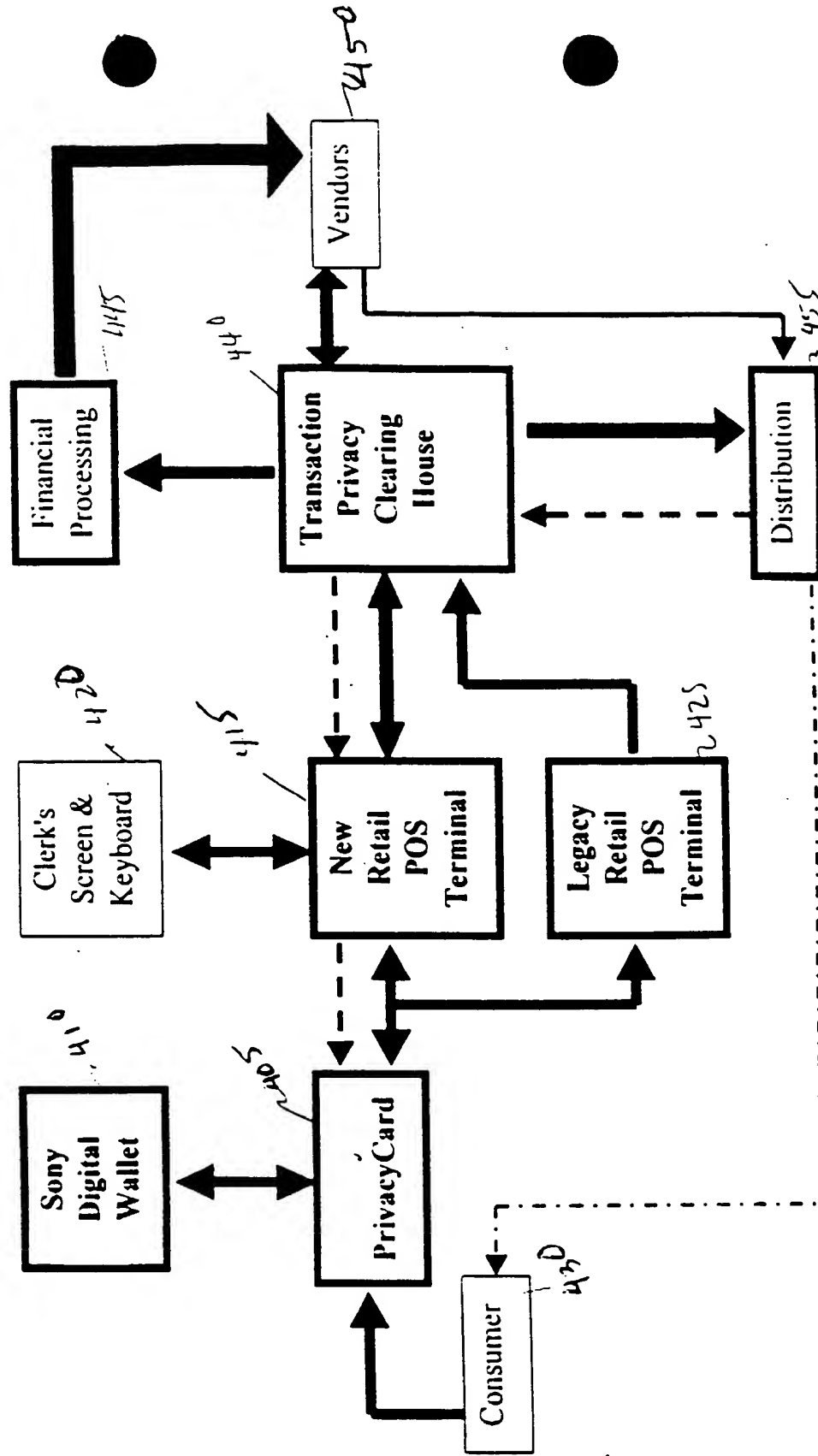


Fig 4

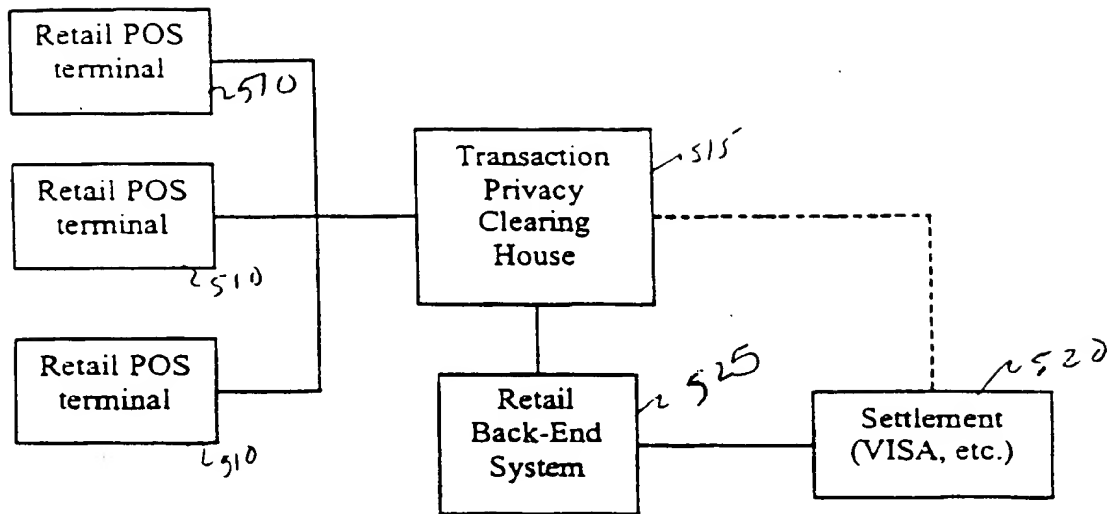


Diagram 5a: A retail system modified to support the interaction of legacy POS terminals with the Digital Wallet system

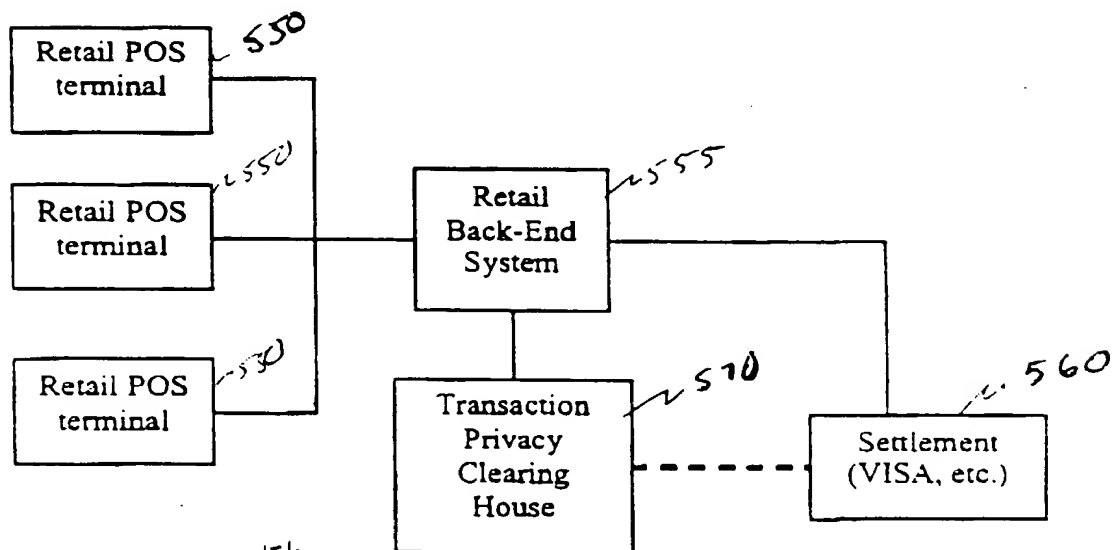
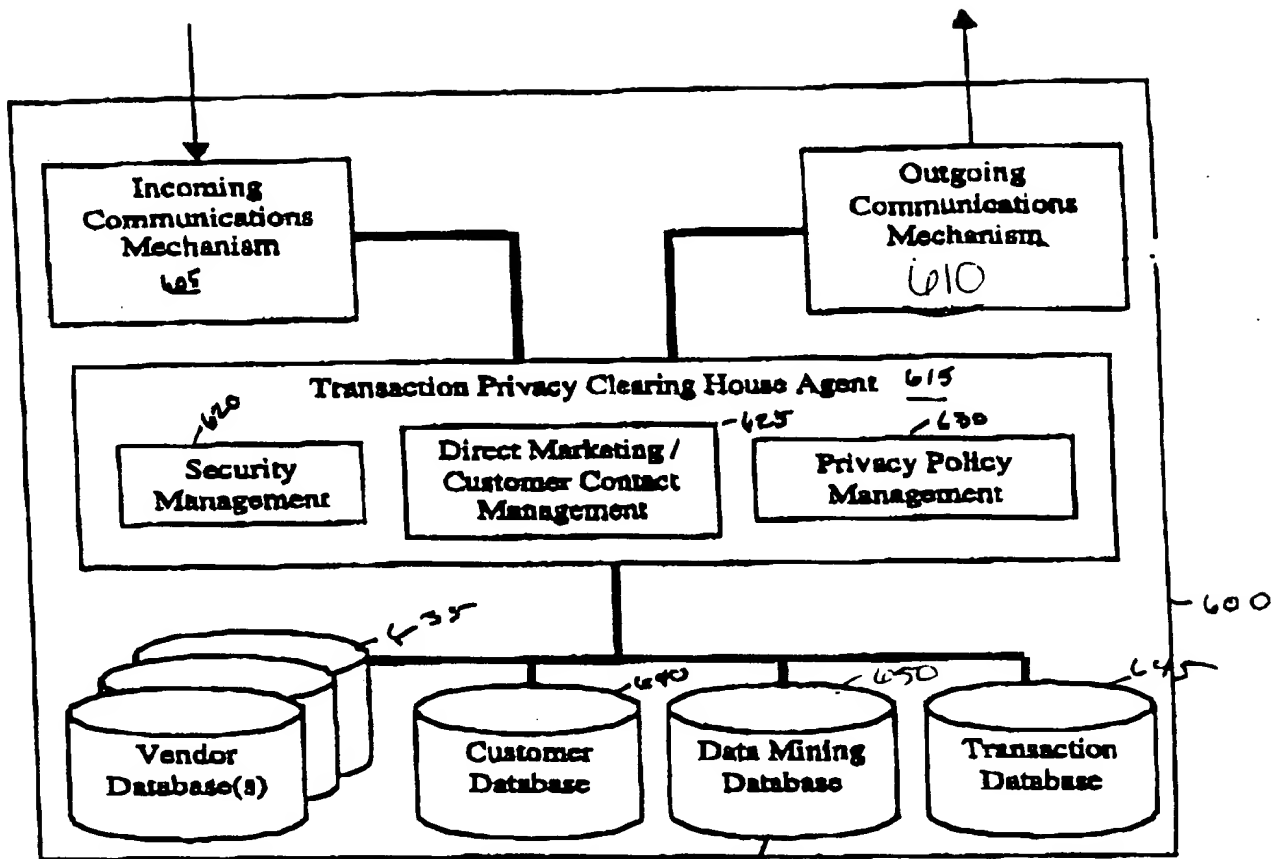


Diagram 5b: An alternative embodiment of the retail system modified to support the interaction of legacy POS terminals with the Digital Wallet system



Transaction Privacy Clearing House: Major Components

Fig. 6

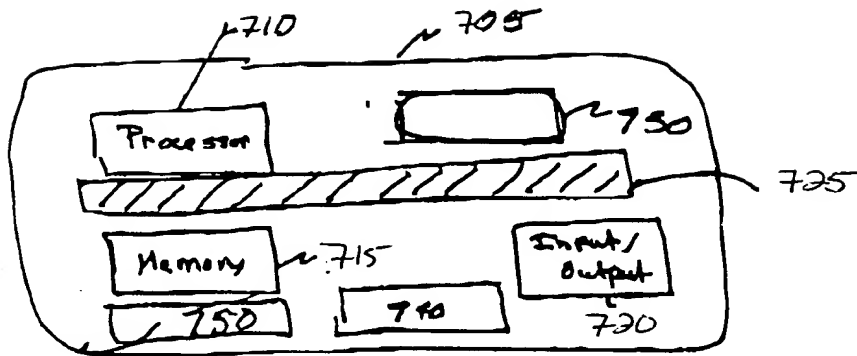


Figure 7a

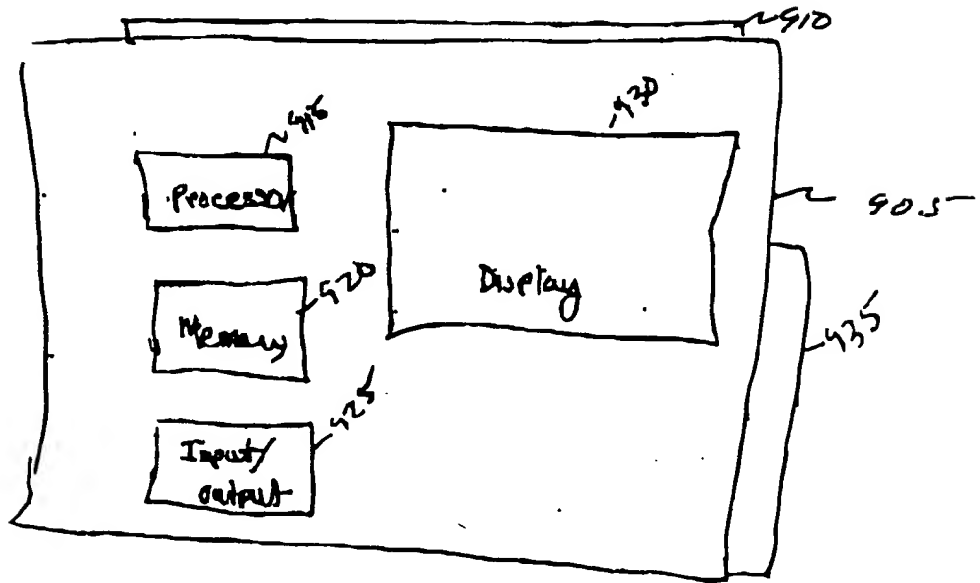
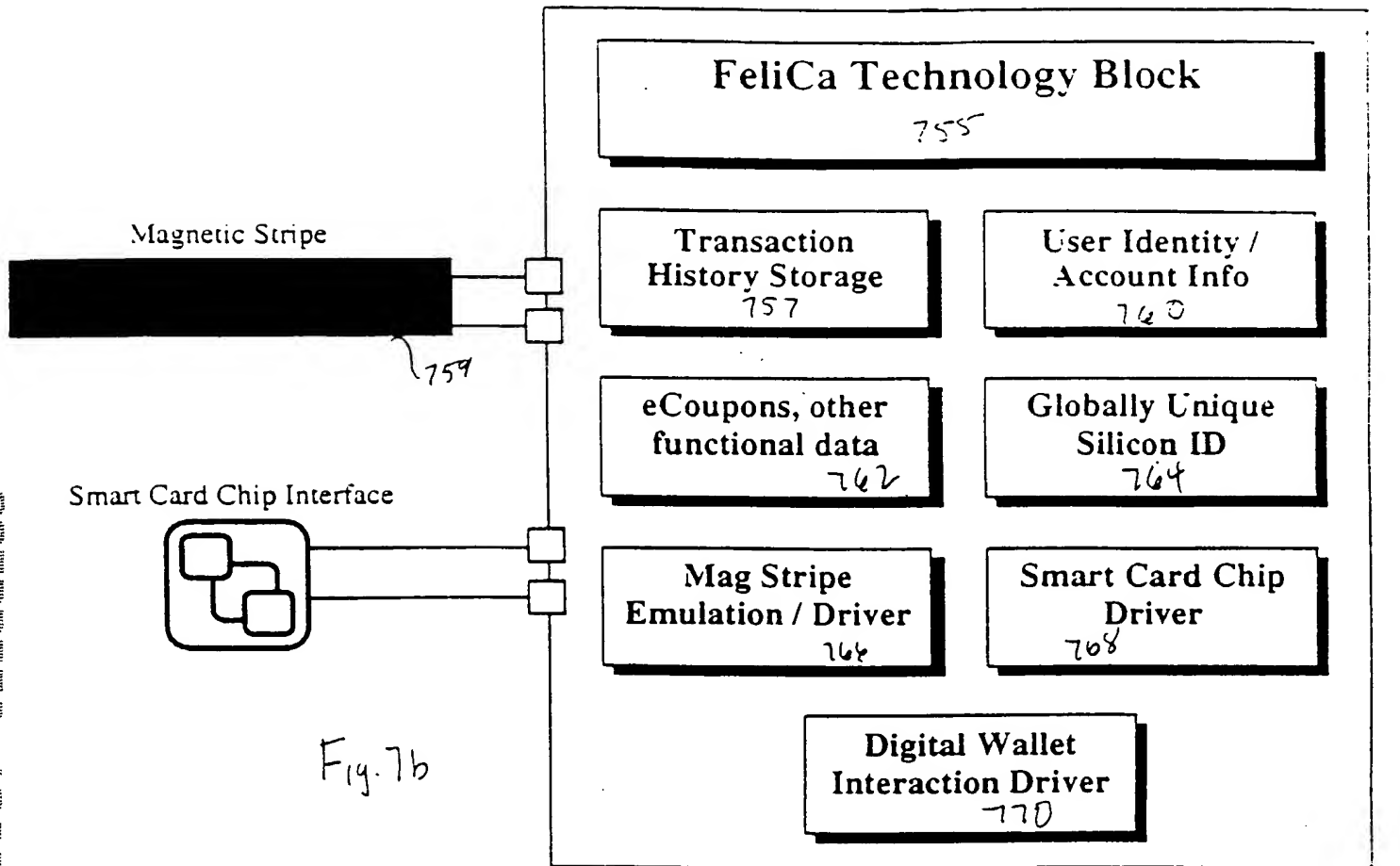


Figure 9a

2003-05-22-00



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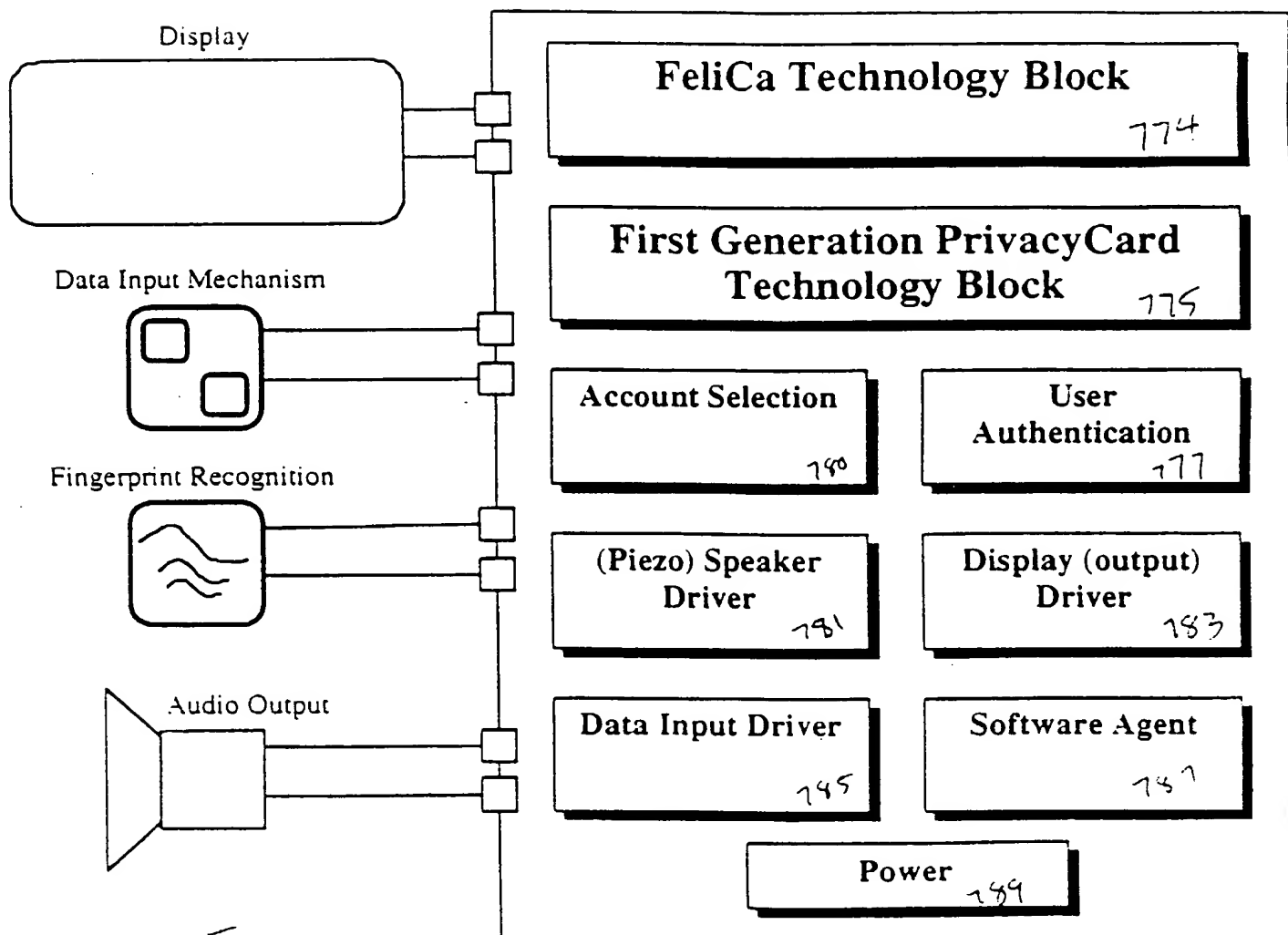
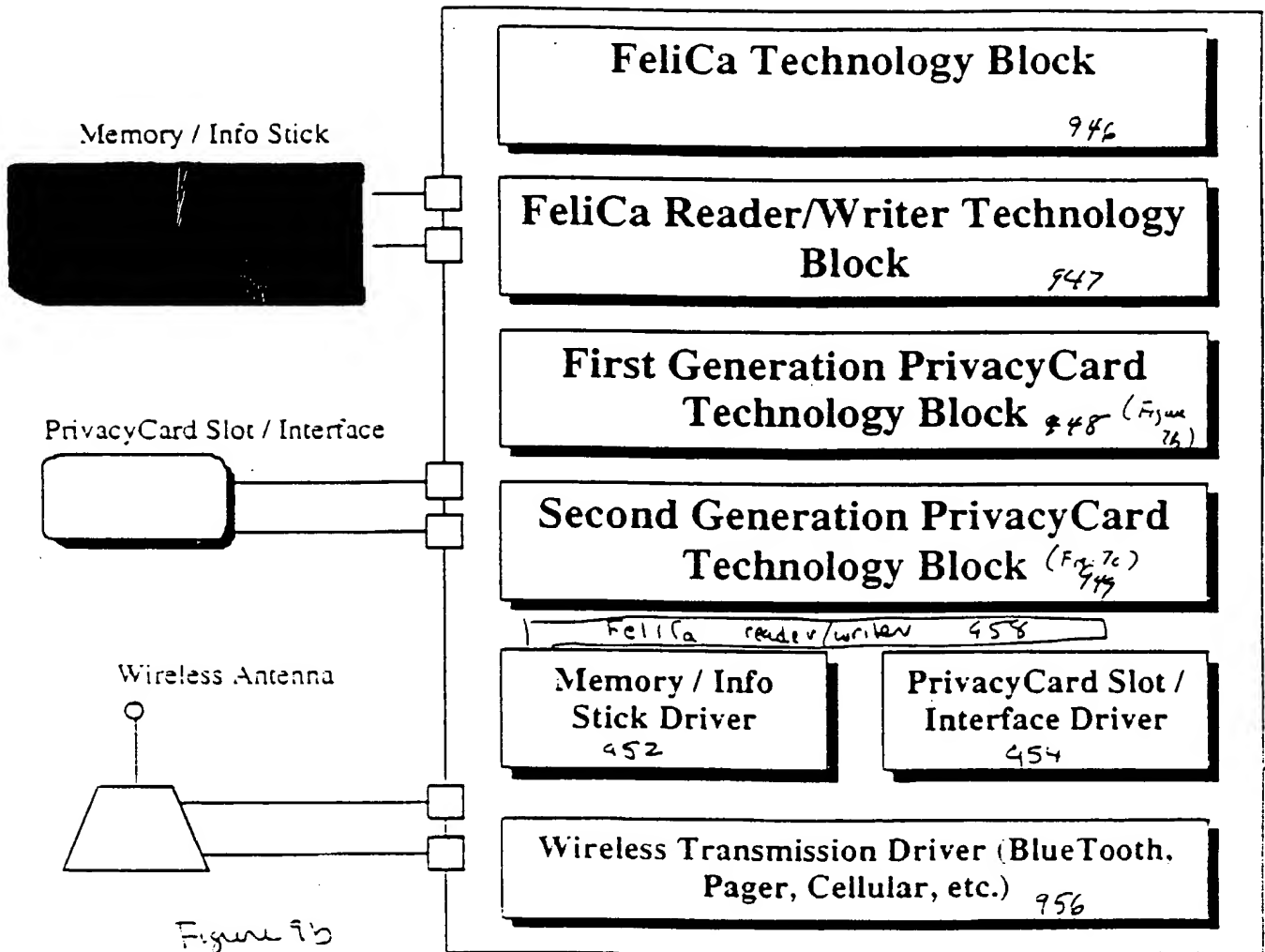


Fig. 7c

Digital Wallet




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sequenceDiagram
    participant User
    participant Digital Wallet
    participant Laptop PC
    participant TPCH

    User->>Laptop PC: 110 1) submit electronic registration, provide fingerprint
    Laptop PC->>TPCH: 110 2) encrypt & deliver fingerprint sample + registration
    TPCH->>Digital Wallet: 110 3) initialize DW device, deliver to user
    User->>Digital Wallet: 110 4) activate & verify delivery, user
    Digital Wallet->>TPCH: 110 5) confirm successful delivery, user
    TPCH->>Digital Wallet: 110 6) enabled for use
    Digital Wallet->>User: 110 7) display ready message
    
```

Digital Wallet Setup
(Alternate Embedment)

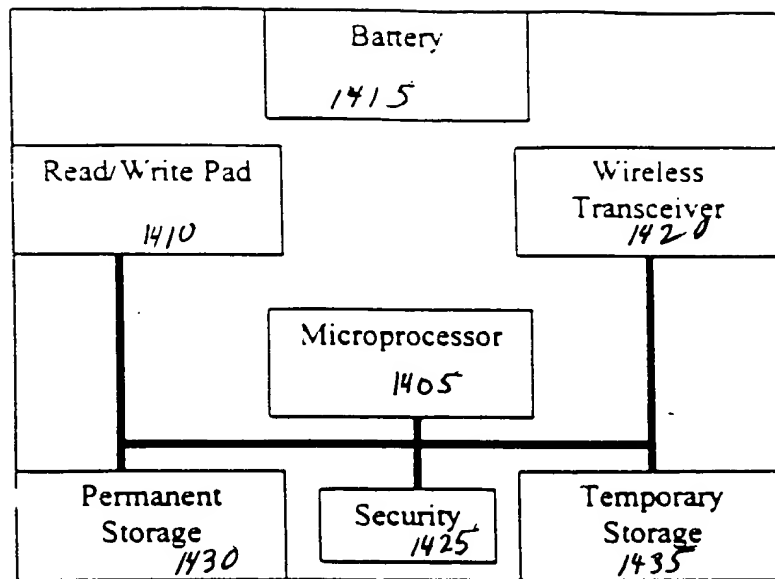


Diagram of the major components of the PersonalPOS,
showing the data/address bus interconnect.

Fig 14

START

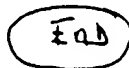
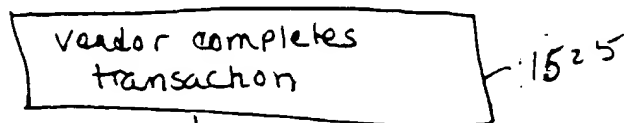
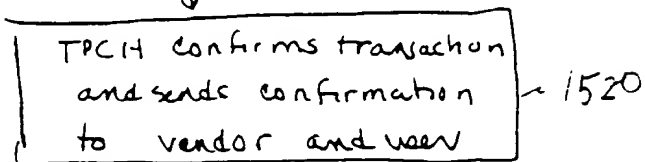
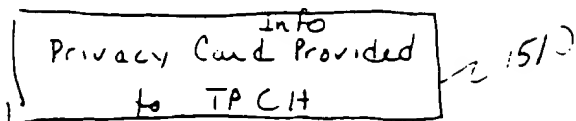


Fig. 15

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sequenceDiagram
    participant User
    participant Digital Wallet
    participant Privacy Card
    participant Clerk
    participant Retail POS Terminal
    participant TPCB
    participant Vendor

    Clerk->>Retail POS Terminal: /601) trigger purchase
    Retail POS Terminal->>Clerk: /602) display current total
    Retail POS Terminal->>User: /603) request payment
    User->>Digital Wallet: 4) trigger payment with eCoupons
    User->>Privacy Card: 5) request authorization & info
    User->>Digital Wallet: 6) provide fingerprint, eCoupon selection
    Digital Wallet->>Clerk: /607) display eCoupons
    User->>Privacy Card: /609) request card
    Privacy Card->>Retail POS Terminal: /608) scan barcodes
    User->>Digital Wallet: /610) select account
    Digital Wallet->>Privacy Card: /611) secure exchange, program mag stripe
    User->>Privacy Card: /612) ready to use
    User->>Clerk: /613) remove card, hand to clerk
    Clerk->>Retail POS Terminal: /614) swipe card
    Clerk->>TPCB: /615) transaction request: purchase record, account info
    TPCB->>Clerk: /616, 617) transaction confirmation
    TPCB->>Vendor: /619) settle funds, data mining info
    Clerk->>User: /618) return card & paper receipt
    TPCB->>Digital Wallet: /620) electronic receipt via Internet
    
```

Detail Transaction

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sequenceDiagram
    participant User
    participant DW as Digital Wallet
    participant Browser
    participant PPOS as PPOS Terminal
    participant TCH as TPCH
    participant Vendor

    User->>Browser: 1) trigger purchase
    Browser->>PPOS: 2) request purchase, provide purchase record
    PPOS->>Browser: 3) validate user, get account info
    PPOS->>User: 4) request fingerprint, account selection
    User->>DW: 5) provide fingerprint, account selection
    DW->>PPOS: 6) user validated, account data
    PPOS->>TCH: 7) transaction request: purchase record, DW ID, account info
    TCH->>PPOS: 8) transaction confirmation
    PPOS->>User: 9 - 11) transaction confirmation
    TCH->>Vendor: 12) ship physical content
    User->>TCH: 13) secure content distribution
    User->>TCH: 14) confirmation of receipt
    TCH->>Vendor: 15) settle funds
    
```

Web Transaction

000001"052EE260

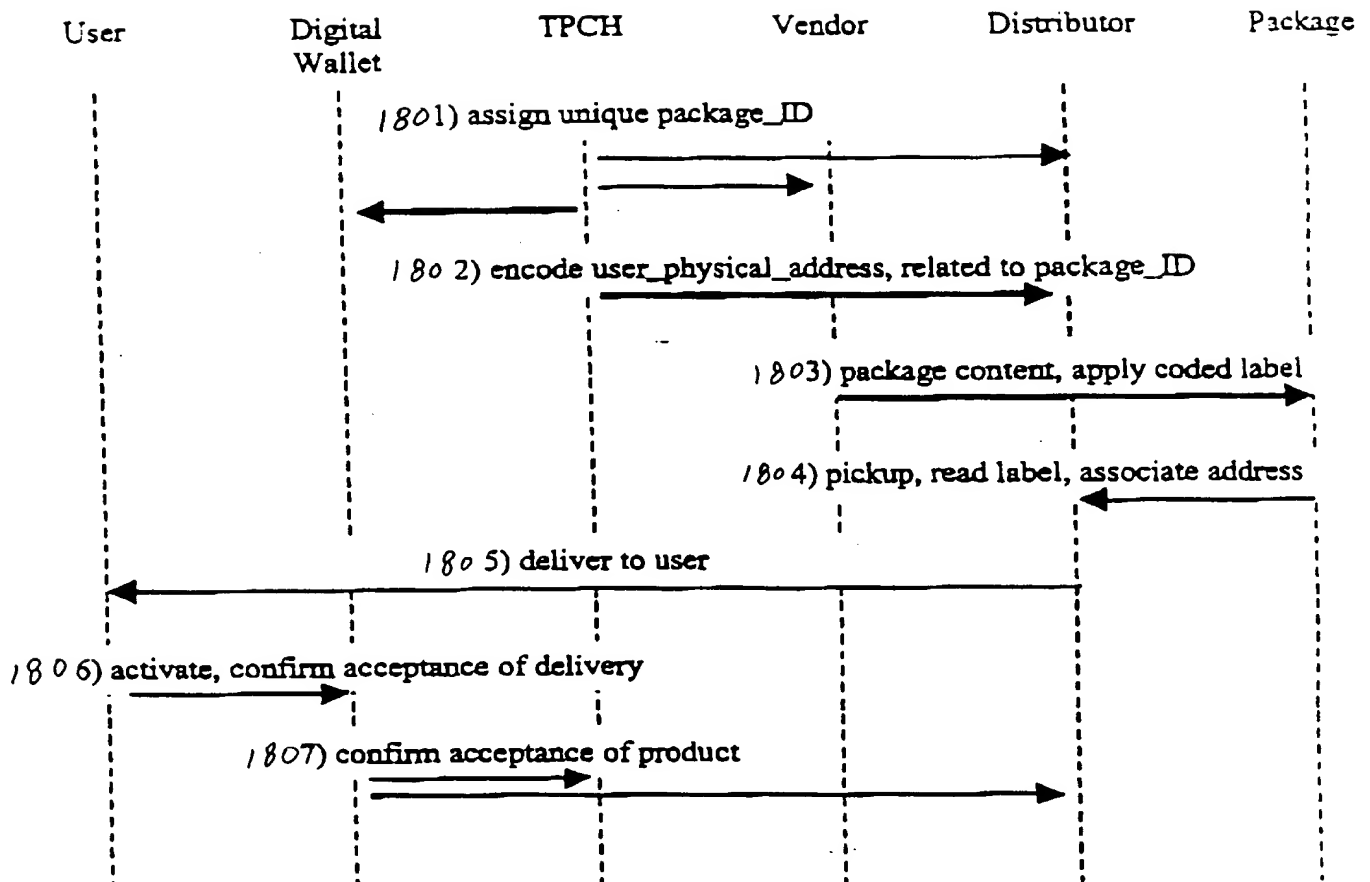


Fig. 18

Delivery of Product

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sequenceDiagram
    participant User
    participant DigitalWallet as Digital Wallet
    participant TPCH
    participant Vendor
    participant Distributor
    participant Package

    User->>Package: 1901) repackage material
    User->>DigitalWallet: 1902) activate, select Return Package
    DigitalWallet->>Package: 1903) apply coded label with package_ID, vendor_address
    DigitalWallet->>Vendor: 1904) contact vendor, distributor for return
    DigitalWallet->>Distributor: 
    Distributor->>Package: 1905) pick up, decode label for package_ID, vendor_address
    Distributor->>Vendor: 1906) deliver to vendor
    
```

Return a F Product

```

sequenceDiagram
    participant User
    participant Digital Wallet
    participant DTV
    participant TPCH
    participant Vendor
    participant POS Terminal

    User->>Digital Wallet: 2001) activate, select Purchase
    Digital Wallet->>POS Terminal: 2002) request product info
    POS Terminal-->>Digital Wallet: 2003) return product information
    Digital Wallet->>TPCH: 2004) issue transaction request, provide data & DW ID
    TPCH->>Vendor: 2005) transaction data & DW ID
    Vendor-->>TPCH: 2006) data mining, direct marketing
    TPCH-->>Digital Wallet: 2007) full message or content reference
    Digital Wallet-->>User: 2008) notify user
    User->>Digital Wallet: 2009) view content, respond as needed
    Digital Wallet->>Vendor: 
    
```

Data Mining

FIG. 21

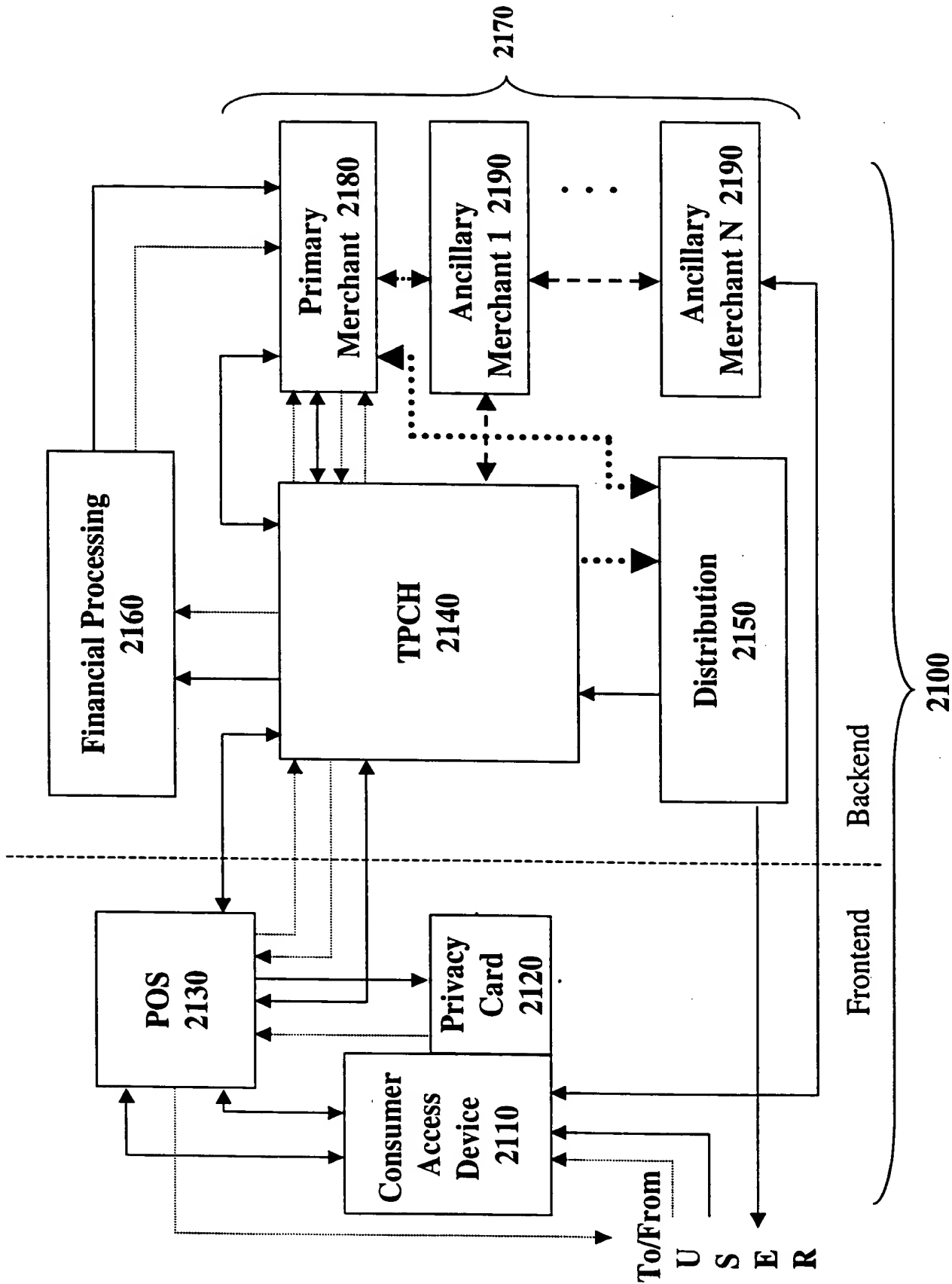


FIG. 22A

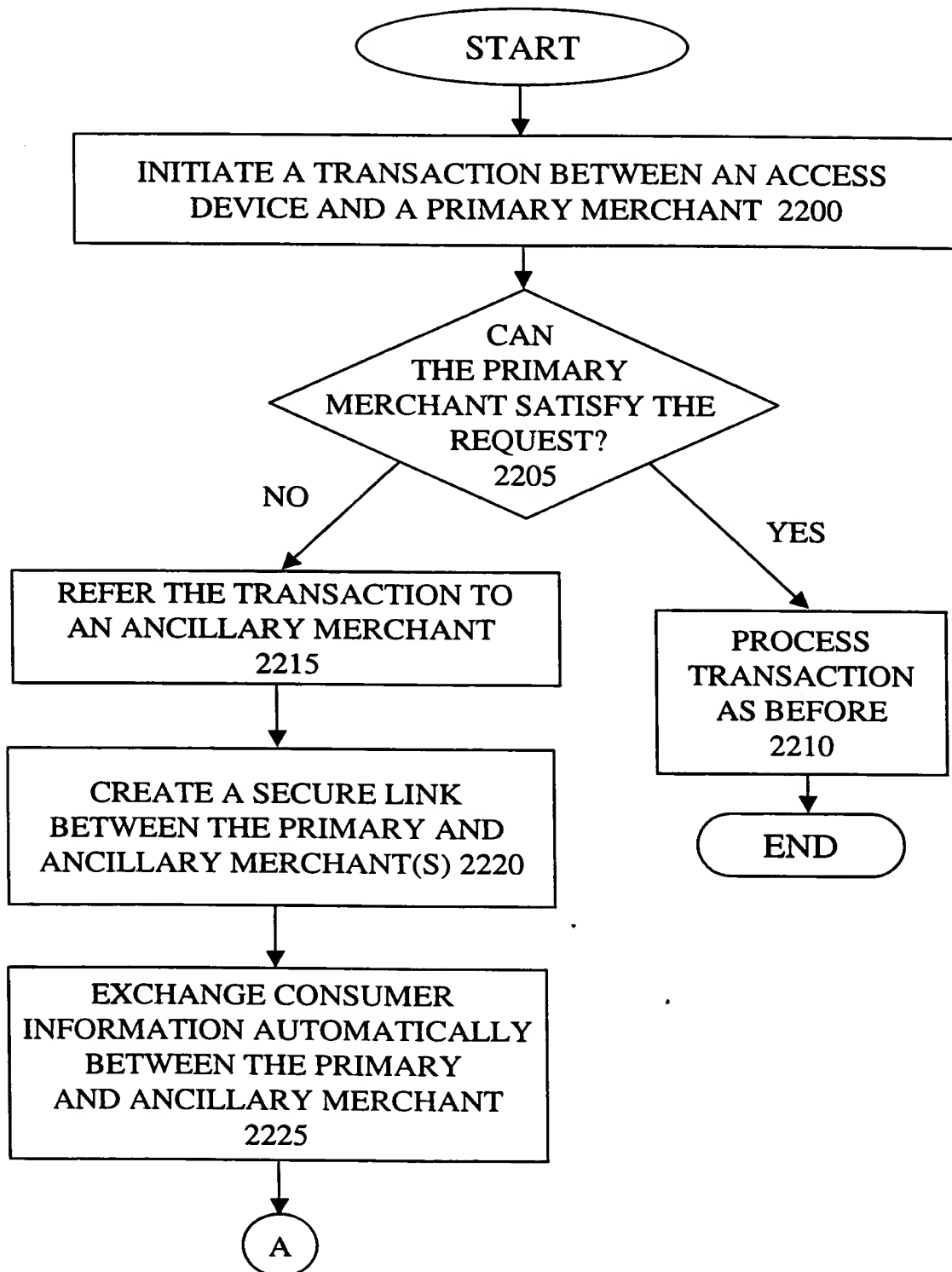


FIG. 22B

